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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/619,512

Filing Date: July 16, 2003

Appellant(s): KEUM ET AL.

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Ralph T. Webb  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed October 10, 2007 appealing from the Office action mailed June 6, 2007.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is incorrect. A correct statement of the status of the claims is as follows:

Claim 37 has been cancelled in the Amendment under 37 CFR 41.33(b)(1) filed October 12, 2007, which has been entered.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is incorrect.

The Amendment under 37 CFR 41.33(b)(1) filed October 12, 2007 has been entered.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

|              |         |        |
|--------------|---------|--------|
| JP 60-043480 | Mashita | 3-1985 |
| JP 61-132589 | Morioka | 6-1986 |
| JP 61-156809 | Mori    | 7-1986 |
| 5,944,903    | Tiedje  | 8-1999 |
| 6,237,529    | Spahn   | 5-2001 |

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 2, 6-12, 16-19, 22-26 and 35-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori (JP 61-156809) taken in view of Mashita (JP 60-043480) and Morioka (JP 61-132589).

Mori (see Figs. 2(a) and 2(b), for example) discloses a heating crucible for forming a deposition film in a vacuum deposition chamber. The heating crucible includes a main body and a jetting nozzle 3a defined in an upper wall of the main body.

Material to be evaporated is placed in the crucible and heated to vaporize it. The crucible includes an inner member 4 which is a baffle board. The baffle board 4 includes a baffle board surface having an area facing the nozzle 3a. Mori teaches that the purpose of the baffle board is to prevent "bumped" melted substance from reaching the nozzle or exiting the nozzle. "Bumping" refers to unvaporized melted material that spits or splatters as it is heated and boils. The inner member has one or more openings

5 that are formed around the outer circumference of the baffle board that faces the nozzle, and the edges of the openings are defined by the outer circumference of the baffle board and an inner wall of the crucible. The purpose of the openings is to allow for a transmittance of the vaporized coating material therethrough, wherein the upper wall is perpendicular to a transmission direction of the vapor. The claim 1 limitation of "which receives an organic compound" is a recitation of intended use of the claimed apparatus and the present apparatus claims are not limited to use with any one particular type of coating material. The apparatus of Mori has an inherent capability of being used with an organic compound of the type recited in applicants' recitation of intended use. The inner member of Mori is supported by "fixing portions" that are formed as ledges in the surface of the inner wall of the crucible.

Mashita (see Figs. 3 and 4) discloses an analogous vaporizer, in which an inner member baffle board 3 is supported by fixing portions 6 (see Fig. 4) in the form of protrusions that are suspended from an inner wall of the crucible. Mashita also teaches that the purpose of the baffle board is to prevent "spitting". The "spitting" problem addressed by Mashita is the same problem as the "bumping" problem addressed by Mori, and is the same problem addressed by applicants (see paragraphs 6 and 7 of applicants' specification, for example). It is noted that paragraph 7 of applicants' specification teaches that it is undesirable to have lumps of the coating material become attached to the substrate, which is the same problem addressed by Mashita. Paragraph 7 of the specification also teaches that it is undesirable to have lumps of coating material become attached to the nozzle of the crucible, because the nozzle becomes

clogged. This is the same problem addressed by Mori. Therefore, Mori, Mashita and applicants all use baffle boards to solve the same basic problem, namely "bumping" and spitting.

It is noted that Mashita refers to his baffle board 3 as a lid. It is further noted, however that the inner member 3 of Mashita is still a baffle board that is used for the exact same purpose as that of Mori's baffle board 4, that purpose being to prevent bumping or spitting.

It would have been obvious to one skilled in the art to modify the apparatus of Mori by replacing the ledge fixing portions of Mori with suspended protrusion fixing portions of the type taught by Mashita, because the protrusions of Mashita are functionally equivalent and are equally effective for achieving Mori's desired goal of supporting a baffle board, and because Mashita teaches that an inner member baffle plate can successfully be supported inside a crucible by using fixing portions that are attached to the inner wall of the crucible.

The fixing portions 6 of Fig. 4 of Mashita can correctly be described as "suspended" because The dictionary definition of "suspend" is "to hang so as to be free on all sides except the point of support". Also, the definition of "hang" includes "to fasten to some elevated point without support from below: SUSPEND", and "to apply to a wall". These definitions are taken from the dictionary definitions cited in the PTO-892 attached to the Final rejection mailed June 6, 2007. In Fig. 4 of Mashita, the fixing portions 6 are clearly illustrated as separate parts that are attached to the inner walls of the crucible, wherein the fixing portion is fastened to an elevated point of support,

without support from below, so as to be free on all sides except the point of support.

Therefore, the fixing portions 6 of Fig. 4 of Mashita can correctly be described as "fixing portions suspended from an inner wall of the main body" of the crucible.

Also, Mashita teaches that openings in a baffle board can be provided in the form of notches in the outer circumference of the baffle board. It would have been obvious to one skilled in the art to modify the baffle board of Fig. 1(b) or Fig. 2(b) of Mori by providing it with openings formed as notches in the manner taught by Mashita, because Mashita teaches that a notched baffle board can successfully be used to prevent the spitting phenomenon in a vaporizing crucible, which is the purpose of Mori's baffle.

It is noted also that when notched openings of the type taught by Mashita are formed in the outer circumference of Mori's baffle board, the notches will be "between the supporting positions of the fixing portions" as claimed. This can be seen by viewing the baffle board of Fig. 2(b) of Mori and visualizing notches (of the type illustrated in the baffle board of Fig. 3 of Mashita) formed in the edges of Mori's baffle board. Also, these notched openings in Mori's baffle board will be "defined by separate notches in the outer circumference and the inner wall of the main body" as claimed.

Alternatively, it also would have been obvious to replace the continuous support ledge of Mori with a plurality of individual support parts that are suspended from the inner wall as taught by Mashita. It is noted that Mashita teaches (see page 4, last paragraph of the translation) that in the Fig. 4 embodiment, "several support parts 6 must be provided for preventing the lid from falling". Also, Morioka (see page 5, lines 17-20 of the translation) discusses the number of individual support parts that can be

used to support a baffle board. He teaches that using only two protrusions is unstable and suggests "there may be three, or at least four of them". One skilled in the art could have obviously determined how many suspended protrusions of the type used in Fig. 1 of Mashita were desirable to provide a sturdy and stable support for a notched baffle board in the crucible of Mori. When a plurality of individual suspended supports are used in Mori's Fig. 2(b) crucible to support a baffle board with Mashita's notches, then the notches will be "between the supporting positions of the fixing portions" as claimed, and these notched openings in Mori's baffle board will be "defined by separate notches in the outer circumference and the inner wall of the main body" as claimed.

Also, it would have been obvious to use a cylindrical shaped crucible for the crucible of Mori as recited in claims 35-36, because Mashita and Morioka teach that a cylindrical shaped crucible can successfully be used to accomplish Mori's goal of vapor deposition.

Morioka (see Figs. 1-3) also discloses an analogous vaporizer, in which an inner member baffle board 2 is supported by fixing portions 3 in the form of protrusions that are suspended from an inner wall of the crucible. Morioka's baffle boards are also intended to prevent "bumping" (see page 7, lines 4 and 5 of the translation) as in Mori and Mashita. In Morioka's apparatus the fixing portion protrusions are not shown as being separate parts that are fastened to the crucible as in the case of Mashita's crucible. Therefore, Morioka's teachings are less relevant than Mashita's, because Morioka's protrusions don't meet the requirements of the dictionary definition of "suspend". The teachings of Morioka are still useful, however, because Morioka's

crucible further shows that it would have been obvious to one skilled in the art to replace the ledge fixing portions used by Mori with protrusion fixing portions as taught by both Mashita and Morioka. Also, as noted above, Morioka provides a useful teaching regarding the number of protrusions that can be used to support a baffle board. This teaching by Morioka is obviously applicable to the suspended protrusions of Mashita. In this respect, Morioka reinforces the teachings of Mashita. It is noted again that Mashita describes his fixing portions 6 as separate parts that are fixed to the inner walls of the crucible, and therefore Mashita on his own makes obvious the step of fastening fixing portions to the inner wall of a crucible such that the fixing portions are suspended.

The reasons given above are sufficient to show that the pending claims as they are presently written should be considered obvious.

In the Final rejection, an alternate reason was also given to explain why Mori's baffle board by itself meets the claim 1 limitation of "the inner member having one or more separate openings formed therein along the outer circumference thereof and between the supporting positions of the fixing portions, borders of the openings being defined by separate notches in the outer circumference and the inner wall of the main body". Specifically, the baffle board 4 of Mori (see Fig. 1(b) or 2(b)) includes a surface having an area facing the nozzle 3a. The baffle board has one or more openings 5 that are formed around the outer circumference of the surface having the area that faces the nozzle, and the edges of the openings are defined by the outer circumference of the baffle board and an inner wall of the crucible. Regarding the limitation of "being defined by separate notches", it is noted that if enough notches were removed from the board of

Mori, then the board of Fig. 1b or 2b would result. Thus, Mori's board is in accordance with applicants' description of their opening at page 6, lines 16-19 of the specification, which states as follows:

The openings 31 can be continuously or discontinuously formed around the edge of the baffle board 32. For example, Fig. 4 shows that the openings 31 are linked together along the edge of the baffle board 32, and the fixing portion 33 extends downward from a bottom surface of the baffle board 32.

It appears from this passage that applicants intend for the recited "one or more openings" to include an opening that is supposedly formed by removing many separate notches around the edge of the baffle board 32, until none of the original edge remains, thus forming a "continuously formed" opening. If that is the case, then the openings 5 shown in Fig. 1(b) of Mori or the openings 5 of Fig. 2(b) of Mori are readable on the type of baffle board opening that applicants are contemplating and claiming. Also in that case, it also would have been obvious to modify Mori's crucible by substituting a protruding suspended support as taught by Mashita for the ledge support of Mori.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mori (JP 61-156809) in view of Mashita (JP 60-043480) and Morioka (JP 61-132589) for the reasons stated above in the rejection of claims 1, 2, 6-12, 16-19, 22-26 and 35-37, and taken in further view of Tiedje (5,944,903) (see Fig. 6). It would have been obvious to one skilled in the art to provide the vaporizing crucible of Mori with a temperature-

sensing unit because Tiedje teaches that a vapor deposition process can desirably be more accurately controlled by measuring the crucible temperature.

Claims 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori (JP 61-156809) in view of Mashita (JP 60-043480) and Morioka (JP 61-132589) for the reasons stated above in the rejection of claims 1, 2, 6-12, 16-19, 22-26 and 35-37, and taken in further view of Spahn (6,237,529). Spahn (see Figs.6 and 7, for example) teaches the step of using an evaporation crucible of the type disclosed by Mori, Mashita and Morioka in a process of depositing a layer of organic electroluminescent (organic EL) coating material on a substrate. It would have been obvious to one skilled in the art to use a conventional evaporation crucible of the type disclosed by Mori, Mashita and Morioka to form an organic EL coating because Spahn teaches that a crucible of the type disclosed by Mori, Mashita and Morioka can successfully be used for depositing organic EL coatings.

#### **(10) Response to Argument**

Applicants have argued that there is no information in Mashita that would lead one to conclude that the support parts 6 are fixing portions suspended from an inner wall, and that there is no information provided in Mashita regarding exactly how the support parts are provided in the crucible of Mashita. It is noted, however, that Fig. 4 of Mashita clearly illustrates the support parts 6 as being parts that are separate from the crucible. Fig. 4 also shows that the physical relationship of the support parts 6 and the inner wall is one of physical contact. This schematic diagram, taken with Mashita's teaching that "support parts 6 must be provided for preventing the lid from falling" (see

the last sentence of page 4 of the translation) would have been clearly suggestive to one skilled in the art that a baffle board can be supported in the crucible by fastening the support parts to the inner wall of a crucible, and then placing the baffle board on the support parts. This schematic diagram clearly shows the positional relationship of the support parts 6 and the inner wall. The positional relationship shown is that the support parts 6 are separate parts that are in physical contact with the inner wall.

Also, by attaching the support parts 6 to the inner wall as shown by Mashita in Fig. 4, the support parts 6 are inherently "suspended" from the wall. This is because, as discussed above, the definition of "suspend" is "to hang so as to be free on all sides except the point of support", and the definition of "hang" includes "to fasten to some elevated point without support from below: SUSPEND", and "to apply to a wall". Once the support parts are attached in the position illustrated by Fig. 4, they will inherently meet the definition of "suspended".

Applicants have argued in effect that there is no information to be gained from the schematic diagram of Fig. 4 of Mashita. It is noted, however, that the reason for including schematic drawings in a patent specification is that drawings are an efficient way of providing technical information. It is noted that most of the claim limitations in applicants own independent claims were added by amendment and are supported only by applicants' Fig. 2 instead of by the written description of applicants' specification. Therefore, applicants likely realize that a patent specification does include all of the information that is illustrated in the Figs. of the patent specification. This is also the case with Mashita's Fig. 4 schematic drawing.

The information conveyed by Fig. 4 of Mashita, regarding the shape of the support parts 6, and the relative positioning of the support parts 6 and the wall, is at least clearly suggestive to one skilled in the art that the support parts 6 can be fastened to the wall, and therefore to do so is obvious in view of Mashita. In that case, the fixing portions are suspended as claimed.

Regarding the dictionary definition of the word "hang", applicants have argued that the sub-definition 4 of "to apply to a wall" is clearly indicated in the definition as being in the context of applying wallpaper. It is noted, however, that the dictionary definition of "to apply to a wall <~ wallpaper>" uses wallpaper as an example of word usage, but does not in any way limit the word to only that usage. Common items that are suspended from walls by fastening include lighting fixtures, handrails, mounting brackets and shelves, among others. While the first definition of "hang" provided by the dictionary is "to fasten to some elevated point without support from below: SUSPEND", sub-definition 4 makes clear that the elevated point can be a point on a wall, as with Mori's support parts 6.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

*Richard Bueker*

Richard Bueker

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